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Moraes, Danielle Chianca de Andrade; Oliveira, Regina Celia; Motta, Maria Catarina Salvador da; Ferreira, Oscar Luiz Cardoso; Andrade, Maria Sandra

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RESEARCH

Terapia antirretroviral: a associação entre o conhecimento e a adesão

Antiretroviral therapy: the association between knowledge and the compliance

Terapia antiretroviral: la asociación entre el conocimiento y el cumplimiento

Danielle Chianca de Andrade Moraes [1] , Regina Celia Oliveira [2] , Maria Catarina Salvador da Motta [3] , Oscar Luiz Cardoso Ferreira [4] , Maria Sandra Andrade [5]

ABSTRACT

Objective: identifying the association between knowledge about antiretroviral therapy and the level of compliance to adults' treatment in outpatient clinics. **Method:** a cross-sectional study carried out in the Countryside of Pernambuco in 2013. Study participants were 256 adults under antiretroviral therapy. There were used three data collection instruments. For comparison analysis of qualitative variables the Pearson's chi-squared test was used. It was approved by the Research Ethics Committee of the Oswaldo Cruz University Hospital under number 205.799. **Results:** 70,3% of people with regular and low level of compliance to the antiretroviral were detected and 84,8% with a regular level of knowledge. A significant association between the level of knowledge and the level of compliance with the treatment was identified (p<0,001). **Conclusion:** the knowledge level about antiretroviral therapy seems to influence the compliance with treatment, suggesting that the health professionals intensify their educational actions in health by involving the theme. It is recommended further studies in this field of research. **Descriptors:** Medication compliance, Knowledge, Highly active antiretroviral therapy, Anti-retroviral agents.

RESUMO

Objetivo: identificar a associação entre o conhecimento sobre a terapia antirretroviral e o nível de adesão ao tratamento de adultos em rede ambulatorial. **Método:** estudo transversal realizado na Região Agreste de Pernambuco em 2013. Participaram 256 adultos em terapia antirretroviral. Utilizaram-se três instrumentos de coleta de dados. Para análise de comparação de variáveis qualitativas utilizou-se o teste Qui-quadrado de Pearson. Sendo aprovado pelo CEP do Hospital Universitário Oswaldo Cruz número 205.799. **Resultados:** 70,3% de pessoas com nível de adesão regular e baixa aos antirretrovirais e 84,8% com nível de conhecimento regular. Identificou-se associação significativa entre o nível de conhecimento e o nível de adesão a tratamento (p<0,001). **Conclusão:** o conhecimento sobre a TARV parece influenciar na adesão ao tratamento, sugerindo que os profissionais de saúde intensifiquem suas ações de educação em saúde envolvendo a temática. Recomenda-se que outros estudos sejam realizados. **Descritores:** Adesão à medicação, Conhecimento, Terapia antirretroviral de alta atividade, Antirretrovirais.

RESUMEN

Objetivo: identificar la asociación entre el conocimiento acerca de la terapia antirretroviral y el nivel de cumplimiento al tratamiento de los adultos en la red ambulatoria. **Método:** este es un estudio transversal conducido en la Región Agreste de Pernambuco en 2013. Participaron 256 adultos en tratamiento antirretroviral. Se utilizaron tres instrumentos de colección de datos. Para la comparación analítica de variables cualitativas se utilizó el test de Chi-cuadrado de Pearson. Siendo aprobado por el Comité de Etica en la Investigación del Hospital Universitario Oswaldo Cruz número 205.799. **Resultados:** 70,3% de las personas con un nivel de cumplimiento regular y baja a los antirretrovirales y el 84,8% con un nivel de conocimiento regular. Se identificó una asociación significativa entre el nivel de conocimiento y el nivel de cumplimiento al tratamiento (p <0,001). **Conclusión:** el nivel de conocimiento acerca de la terapia parece influir en el cumplimiento al tratamiento, lo que sugiere que los profesionales de la salud intensifiquen sus actividades de educación para la salud relacionados con el tema. Se recomienda que más estúdios se lleven a cabo. **Descriptores:** Cumplimiento de la medicación, Conocimiento, Terapia antirretroviral altamente activa, Antiretrovirales.

1 Nurse, PhD in Health Science, Professor of Graduation Course, Master degree and PhD in Nursing of the Nursing Department of the Federal University of Rio Grande do Norte/UFRN. E-mail: rirosendo@yahoo.com.br 2 Ana Raquel Cortês Nelson. Academic ofthe Nursing Graduation Course/UFRN, Scholarship PIBIC/CNPq. E-mail: ana_nelson88@hotmail.com 3 Fernando Hiago da Silva Duarte. Academic of the Nursing Graduation Course/UFRN, Scholarship PIBIC/CNPq. E-mail: fernandohiago@hotmail.com 4 Nanete Caroline da Costa Prado. Academic of the Nursing Graduation Course/UFRN, Bolsista PIBIC/CNPq. E-mail: caroline_k16@hotmail.com 5 Romanniny Hévillyn Silva Costa. Nurse, Master degree student by the Post-graduation Program in Nursing/PGENF/UFRN. E-mail: romanniny@yahoo.com.br 6 Danyella Augusto Rosendo da Silva Costa. Nurse, Master degree by the Post-graduation Program in Nursing/PGENF/UFRN. E-mail: danyellaugusto@yahoo.com.br

INTRODUCTION

Infection with the human immunodeficiency virus (HIV) represents one of the major public health problems today. According to the World Health Organization, by the end of 2011, about 34 million people in the world living with HIV/AIDS.[1] In Brazil, until the month of June 2014, 757.042 cases were reported of HIV/AIDS.[2]

In 1996, the therapeutic standard for HIV/AIDS has been consolidated from the combination of new classes of antiretrovirals, being named antiretroviral therapy (ART) combined (*Highly Active Antiretroviral Therapy - HAART*).[3]

Until the year 2011, about eight million people in the world submitted themselves to ART. The Joint United Nations Programme on HIV/AIDS (UNAIDS) estimates that in 2015 about 15 million people are being treated with antiretrovirals.[1,4] In the last fifteen years, the number of people assisted with ART in Brazil increased from 85.000 (1999) to 398.000 (until October 2014).[2]

However, to achieve therapeutic success it is important that the person living with HIV/AIDS (PLWHA) has good adhesion to the taking of antiretrovirals in order that low viral load levels are maintained.[5]

A low adherence to ART or lack thereof can increase the likelihood of viral resistance, providing a treatment with low HIV replication control perspective, as well as the spread of multidrug-resistant viruses, which limits the treatment options.[6]

Adherence to ART is usually influenced by the association of several factors/ variables, inherent or not the subject undergoing treatment, where the little knowledge of the treatment is a factor that can increase the risk of a low or non-adherence.[7]

Regarding knowledge, this part of formulation of an idea or notion about something from the construction is based on socio-cultural values, experiences or previous experiences, critical reflections. It is a dynamic process and in permanent construction.[8]

Thus, the professionals of the health care network, as health promoters, shall use the knowledge of PVHAs leading knowledge exchange to clearly and encouraging the emancipation of the subjects who perform ART, so that they decide on other changes in attitudes and behaviors necessary to improve the quality of life through the promotion of active and participatory behavior, valuing encounters that excel through dialogue.[9]

Under this perspective, health professionals share responsibility for the success of adherence to antiretroviral therapy and its role is essential for the implementation of health education strategies, supporting and strengthening the health care network, focusing on harm reduction and safety of PVHAs.[10]

In this context, the identification of membership level and its association with the level of knowledge with regard to antiretroviral therapy are of utmost importance, since it deals with aspects that can be faced and dealt with by health professionals as well as nurses working in this context.

In this sense, this study aimed to identify the association between knowledge about antiretroviral therapy and the level of compliance to the treatment of adults in outpatient facilities.

METHOD

There was conducted a quantitative, descriptive, observational study with cross-sectional design performed in two Specialized Care Services (SAE) in HIV/AIDS located in Caruaru and Garanhuns, in the contryside region of Pernambuco, State of Brazil.

They included people aged over 18, of both genders, who were taking HAART and who attended the services for viral load monitoring and CD4. They excluded people with mental disabilities and pregnant women.

The sample was stratified type of proportional by SAE, but not probabilistic. The sample size was calculated based on: a) the population size of each SAE (being the SAE "A" with 860 people on ART and SAE "B" with 85 people on ART, to the first month of data collection); b) the margin of error of 5%; and c) the confidence level of 95%. The percentage of losses of the samples in both calculations was of 20%.

The sample size calculation resulted in 192 people to the SAE "A" and 64 people for SAE "B", totaling 256 people to be interviewed. The calculations were made by EPI-INFO® in version 6.0.

Data were collected between May and August 2013. There were used three data collection instruments. For the socio-demographic data and the medical records (prescribed ARV), drew up a questionnaire.

To classify the compliance to ART, there was used the version validated for Portuguese of "Cuestionario para la Evaluación de la adhesion al Tratamiento Antiretroviral" - CEAT-HIV[11,12] (Annex 1). To this end, there was the prior consent of the author.

The CEAT-HIV it is a autoinforme instrument, because of the high percentage of illiterate people in the countryside region of Pernambuco, there was applied to the verbalization of the questions to the people who agreed to participate. It consists of 20 questions that address the main factors that can interfere with adherence to ART: History not patient compliance; doctor-patient relationship; Patient beliefs about HAART; expectations about the therapeutic efficacy; patient effort to follow treatment; assessment of the severity of the side effects of ART for the patient; satisfaction with antiretroviral medication and use

of strategies to remind the patient to take the medication. Thus, it is possible to assess the level of compliance to antiretroviral drug therapy in adults.

After applying the CEAT-HIV, made up the sum of points obtained by the responses of 20 items by the instructions in the CEAT-HIV manual, which was made available by the author for this study. Adherence was classified into three levels[11,12] ,as shown in Figure 1:

Classification of Compliance	Percentual de adesão
Good	Superior to 85%
Regular/Insufficient	Between 50% and 84%
Low	Inferior to 50%

Figure 1. Classification of the level of compliance to antiretroviral therapy.[11,12]

The CEAT-HIV considers good adherence to ART a percentage less than 85% in order to identify significant correlations to this score with blood indicators CD4 count and viral load, from collections and laboratory tests carried out on the day of the interview.[11]

To check the knowledge of ART, we designed a questionnaire based on two studies[13,14] composed of six questions involving general knowledge about the antiretrovirals, with regard to action, indication, duration of treatment, side effects and precautions, name (s) of drug (s), dose (s) and frequency (ies) prescribed by the doctor.

Points were given for each question, considering the importance of its theme for the safe use of medicines on an outpatient basis. It was considered safe use of antiretroviral drugs, the use does not cause harm to health and the patient's well-being.[14] The knowledge was classified in three levels, as demonstrated in Figure 2:

Knowledge classification	Score	Condition of safe use of medicines *
Good	> 8 points	Offers conditions to use the medicine safely under any circumstances.
Regular	Between 6 and 8 points	Offers conditions to use the medicine safely in ideal conditions without any incident that might occur during treatment.
Low	< 6 points	Does not position to use the medicine safely.

Figure 2. Classification of the level of knowledge about antiretroviral therapy developed from two studies.[13,14] * It is considered safe use of antiretroviral drugs that it doesn't cause damage to the health and well-being of the patient.[14]

The questionnaire went for the content validation process, which was submitted to the trial of five judges, independent experts in the subject. There were accepted corrections/changes suggested and subsequently held a pre-test instrument,

with ten people using ART in order to make possible adjustments that could interfere with interpretation of the issues and the results of the collection.

The qualitative variables were analyzed using descriptive statistics: absolute frequencies (n) and relative (%).

For comparative analysis of qualitative variables, we used the chi-square test of Pearson, which was considered error margin of 5% reliability and 95,0%, therefore we used the SPSS program (Statistical Package for Social Sciences), version 21.0.

The study met the national observances ethics in research involving human subjects of the National Health Council Resolution 466/2012, which was approved by the Ethics Committee in Research of the University Hospital Oswaldo Cruz, report number: 205 799. All participants were informed about the purpose of the study, and those who accepted it recorded the agreement in the Term of Consent.

RESULTS AND DISCUSSION

The sociodemographic characteristics of the 256 PVHAs studied are presented in Table 1. It can be observed that the average age was 41,95 years old and standard deviation of 12,01 years, where the highest percentage corresponded to people who were between 30 to 49 years old (64,1%), the majority were male (53,1%), it declared itself the brown race (54,3%) and had low educational level (18,8% were illiterate). Regarding the prescription of antiretroviral drugs, registered in the medical records, the study showed that there was a prevalence (61,7%) of the treatment regimen involving three drugs (Table 1):

Table 1. Distribution of people under antiretroviral treatment, according to the socio-demographic profile and therapeutic schema of antiretroviral drugs prescribed in the chart expert assistance services "A" and "B" (Countryside Region of Pernambuco) - 2013

Variable	N	%
Total	**256**	**100,0**
• **Age**		
18 - 29	35	13,7
30 - 39	77	30,1
40 - 49	87	34,0
50 - 59	32	12,5
60 or older	25	9,8
• **Gender**		
Male	136	53,1
Female	120	46,9
• **Race/ Color**		
White	82	32,0

Dark colored	139	54,3
Black	24	9,4
Other	11	4,3
• **Schooling**		
Illiterate	48	18,8
Incomplete basic	101	39,5
Complete basic	51	19,9
High school/ Higher education	56	21,9
• **Number of anti-retroviral drugs prescribed**		
Two	3	1,2
Three	158	61,7
Four	95	37,1

Source: Researchers' data, 2013.

Concerning the membership level, this was considered "regular" and "low" to the majority (71,3%) of people under ART. As regards the level of knowledge of the treatment, most people use of antiretroviral (51,2%) were classified with a regular knowledge level for security condition in use of medicines, and level with 33,6% low knowledge (Table 2).

Table 2. Distribution of people on antiretroviral treatment according to the level of compliance and treatment knowledge, Specialized Assistance Services "A" and "B" (Countryside Region of Pernambuco) - 2013

Variable	**N**	**%**
Total	**256**	**100,0**
• **Level of compliance**[a]		
Good	76	29,7
Regular/ Insufficient	179	69,9
Low	1	0,4
• **Level of knowledge**[b]		
Good	39	15,2
Regular	131	51,2
Low	86	33,6

Source: Researchers' data, 2013.

[a] Levels defined according to the classification of compliance to antiretroviral treatment validated version for Portuguese (Brazil) "Cuestionario para la Evaluación de la Adhesión al Tratamiento Antiretroviral".[11,12]

[b] Levels defined according to the classification of knowledge developed from two studies.[13,14]

Table 3 shows the association between the level of knowledge and the level of compliance. The results show that the percentage with a solid adherence was higher among those who had good knowledge level (56,4%) and lower among those with the lowest level (20,9%). These differences reveal a significant association between the level of knowledge and the level of compliance ($p < 0,001$).

Table 3. Assessment of the level of compliance according to the level of knowledge of people on antiretroviral treatment in Specialized Assistance Services "A" and "B" (Countryside Region of Pernambuco) - 2013

Level of	Level of compliance							
	Good		Regular/Low		TOTAL		P value[a]	RP (IC to 95)
Knowledge	N	%	N	%	N	%		
Total Group	**76**	**29,7**	**180**	**70,3**	**256**	**100,0**		
Good	22	56,4	17	43,6	39	100,0	p < 0,001[b]	2,7 (1,6 a 4,4)
Regular	36	27,5	95	72,5	131	100,0		1,3 (0,8 a 2,2)
Low	18	20,9	68	79,1	86	100,0		1,00

Source: Researchers' data, 2013. [a]Through of the Pearson's Chi-square test. [b] Significant difference to the level of 5.0%.

The prevalent age group in this study corroborates with the demographic evolution of the disease in Brazil, where, according to studies conducted in the country[7,16], the largest percentage of PLWHA are between 30 and 49 years old.

With regard to gender, although most were males (53,1%), the results indicated that the ratio of male to female is less than two (1,13 men for each woman), which reflects the epidemiological trend of "feminization" of the disease in Brazil[3,7,17] Several studies have also identified a sharp increase of women with HIV/AIDS in the country and a progressive decrease in the proportion of cases between the genders, strengthening the importance of the need for special attention, as regards the prevention of infection HIV/AIDS, aimed at women.[17]

The brown self-reported race was more prevalent (54,3%), followed by Caucasians (32%). This result differs from other studies[16,18] in other regions of the country where the white race is prevalent in this population.

However, it is important to consider the historical circumstances of miscegenation of races in Pernambuco experienced in Brazilian colonization, when the African population was brought from their continent to work in hand sugar work, as well as the Brazilian trend seen in recent years, where, despite white self-reported race have a higher prevalence, has seen a significant rise in the proportion of cases among PVHAs self-declared brown and a significant drop in the proportion of self-declared white.[19,2]

Noteworthy is the percentage of illiterate PVHAs (18,8%), in the countryside region of Pernambuco, since this appeared higher than the national of the same population, 2,3%[2] in 2013. This is an important factor, taking into view that schooling can influence the understanding and access to relevant information to improve the quality of life with treatment.

Most PVHAs (70,3%) had a regular/poor adherence, that is, these people maintained a percentage of adherence to ART less than 85%[11,12], which sets a percentage of insufficient

adherence to treatment success because it does not maintain the level of viral load undetectable.[5]

Similar results were found in other studies[20,21] also assessed the level of adherence to ART in PLWHA in Brazil, through the CEAT-HIV, and found that most people do not have good adherence to drug treatment.

This is an important and worrying scenario for public health, given that when compliance to antiretroviral drugs does not occur properly, the risks of antiretroviral therapy to be ineffective and the chances of spreading the multidrug-resistant viruses increase.[6]

For this reason it is essential that the health staff involved in care for people living with HIV/AIDS have a constant attention to the effective control of the antiretroviral regimen, recognizing the factors that influence adherence and seeking to reduce its impact on treatment.[15]

However, it should be considered that the regular / poor compliance to ART verified may be related to the number of prescription drugs in the therapeutic regimen, where 37,1% of PVHAs showed record four antiretroviral drugs in medical records. It is noteworthy that the greater the number of prescription drugs, the lower the occurrence of proper follow-up treatment.[22]

Regular/low knowledge on ART was observed in most PVHAs (84,4%), which does not subsidize conditions so that medicines are used safely, corroborating other studies[8,23,24] also identified a low knowledge about ART by PVHAs.

When they were asked about the action, indication, duration of treatment, precautions and adverse effects of ART, many PVHAs said it did not know the treatment or reported erroneously that information. These findings are important for non-adherence to treatment or mistaken taking drugs, which puts at risk the safety of PVHAs, with regard to the possibility of damage to health.

Regarding the prescribed antiretroviral (name, dosage and time), most PVHAs did not remember or did not know the nomenclature, and there was still confusion between the names of antiretroviral drugs and the drugs prescribed for the treatment of opportunistic diseases.

Thus, the name and the indication of medicines is particularly important, and should be considered for a good adhesion to treatment[25]. However, the Northeast has been identified as the Brazilian region with the lowest level of knowledge about HIV/AIDS and its treatment.[24]

It is noteworthy that there was a significant association between the level of knowledge and the level of adherence ($p < 0,001$) of PLWHA compared to ART. In this sense, the fact of PVHAs has little knowledge about the drug everyday and the reasons for treatment are factors that are associated with non-adherence to antiretroviral.[23]

Under this perspective, health education practices are strategies that should be considered and adopted in the routine of care networks to PVHAs so encouraging "prospects for self-care, self-awareness, self-respect, autonomy and citizenship".[9]

CONCLUSION

It can be noted that the low level of knowledge about the therapeutic is an aspect that can contribute to poor adherence and should be worked by health professionals and nurses working in SAEs, through guidelines on dealing with the mechanisms related to treatment, so that these are minimized and/or processed to better adapt and live the PVHAs to antiretrovirals, and thus reduce the possibility of damage to the health of these people.

Therefore, it is essential that the aspects that negatively influence the conduct of treatment and interfere in a safe and effective accession be prioritized, in order to promote the empowerment of PLWHA and thus strengthen its autonomy and responsibility with regard to the progress of treatment and so better quality of life.

People who did not attend the SAEs did not have the levels of adherence and knowledge about therapy evaluated. Therefore, it can be inferior or superior to those found, this being a limitation of the study.

It is noteworthy that the findings of this study are of PLWHA in the countryside of Pernambuco, a town that presents socioeconomic and climatic specificities that increase vulnerability to HIV/AIDS. Thus, these results can be used for comparison with other research that addresses the same subject as well as the planning of health education strategies in the region SAEs. Still, it is suggested that further studies are conducted, involving this issue.

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Contact of the corresponding author:
Danielle Chianca de Andrade Moraes
Faculdade de Enfermagem Nossa Senhora das Graças.
Rua Arnóbio Marquês, s/n Santo Amaro. Recife-PE. CEP: 50-100-130.
E-mail: dani_chianca@hotmail.com